

What is Claimed is:

1. An impedance adjustment system, comprising:
 - a current source adapted to provide a predetermined stabilized current corresponding to a current through a first resistor having across it a predetermined stabilized voltage;
 - a first series connected string of a first predetermined number of resistors coupled between the current source and ground, being coupled to the current source at a sense node;
 - a first switch network adapted to select ones of the first predetermined number of resistors for inclusion in the first series connected string;
 - a first logic circuit adapted to control the first switch network to incrementally change the total resistance of the first series connected string;
 - a comparator having a first input coupled to the predetermined stabilized voltage and having a second input coupled to the sense node, and having an output representing the direction of difference in voltage between the first input and the second input of the comparator;
 - a second logic circuit responsive to the output of the comparator, adapted to hold a state of the first switch network to maintain a coarse resistance value of the first series connected string at a value corresponding to a value before which the comparator changes state when the first logic circuit incrementally changes the resistance of the first series connected string, while disconnecting the first series connected string from ground;
 - a second series connected string of a second predetermined number of resistors having a first end coupled to ground, the second logic circuit being adapted to couple a second end of the second series connected string to the end of the portion of the first series connected string that provides the coarse resistance value;

27 a second switch network adapted to select ones of the second
28 predetermined number of resistors for inclusion in the second series
29 connected string; and
30 a third logic circuit adapted to control the second switch network to
31 incrementally change the total resistance of the second series connected
32 string, wherein the second logic circuit is responsive to the output of the
33 comparator and adapted to hold a state of the second switch network to
34 maintain a fine resistance value of the first series connected string at a value
35 corresponding to a value at which the comparator changes state when the
36 third logic circuit incrementally changes the resistance of the first series
37 connected string.

1 2. An impedance adjustment system for providing a selected
2 termination impedance between a pair of terminals, comprising:
3 a current source adapted to provide a predetermined stabilized current
4 corresponding to a current through a first resistor having across it a
5 predetermined stabilized voltage;
6 a first series connected string of a first predetermined number of
7 resistors coupled between the current source and ground comprising a first, a
8 second and a third serial segment thereof, having a first tap point at a
9 connection node of the first and second serial segments and having a second
10 tap point at a connection node of the second and third serial segments;
11 a selection comparator having a first input connected to the
12 predetermined stabilized voltage and having a second input connected to the
13 first tap point, and having an inverting output, PE, and a non-inverting output,
14 NE;
15 a second series connected string of n resistors, each of the resistors in
16 the second series connected string having associated therewith a respective
17 output comparator having a first input connected to the predetermined

18 stabilized voltage, and having a second input connected to one end of the
19 respective resistor, the output comparators having n respective outputs;
20 a first switch arrangement coupled to the selection comparator
21 responsive to substitute the second series connected string of n resistors for
22 the first serial segment when PE is high, and to substitute the second series
23 connected string of n resistors for the second serial segment when NE is
24 high;
25 a network of resistors between the pair of terminals, having a plurality
26 of switches to include or remove, in accordance with switch setting, one or
27 more resistors from the network of resistors; and
28 a logic block responsive to the n respective outputs of the output
29 comparators to control the plurality of switches to include resistors in or
30 remove resistors from the network of resistors adaptively so as to maintain a
31 predetermined termination impedance between the terminals.